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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/714,804

11/16/2000

Richard Shann

S1022/8572

3979

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02/17/2009

James H Morris
Wolf Greenfield & Sacks PC
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Boston, MA 02210

EXAMINER

KISS, ERIC B

ART UNIT

PAPER NUMBER

2192

MAIL DATE

DELIVERY MODE

02/17/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/714,804	SHANN ET AL.	
	Examiner	Art Unit	
	ERIC B. KISS	2192	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 November 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 17, 2008, has been entered. Claims 1-4 and 12 are pending.

Response to Amendment

2. Applicants have been repeatedly put on notice that there does not appear to be adequate enabling support for the feature of automatically tracking changes in the instruction set. (Final Rejection 9/24/2007 p. 4; Advisory Action 2/1/2008; Interview Summary 4/30/2008; Notice of Non-Responsive Amendment 10/16/2008). Because applicants have consistently failed to address this concern, a formal rejection under 35 U.S.C. § 112, first paragraph, is included below in the hope that this issue will finally be resolved.

3. The previous rejections under 35 U.S.C. § 103(a) are withdrawn because of the speculative assumptions that would be necessary to maintain the rejection in view of the unsupported claim feature. *See In re Steele*, 305 F.2d 859, 862 (CCPA 1962).

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

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5. Claims 1-4 and 12 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Descriptive material can be characterized as either “functional descriptive material” or “nonfunctional descriptive material.” In this context, “functional descriptive material” consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of “data structure” is “a physical or logical relationship among data elements, designed to support specific data manipulation functions.” The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) “Nonfunctional descriptive material” includes but is not limited to music, literary works and a compilation or mere arrangement of data. Both types of “descriptive material” are nonstatutory when claimed as descriptive material *per se*. *In re Warmerdam*, 33 F.3d 1354, 1361, 31 USPQ2d 1754, 1760 (claim to a data structure *per se* held nonstatutory).

Data structures not claimed as embodied in computer-readable media are descriptive material *per se* and are not statutory because they are not capable of causing functional change in the computer. *See, e.g., In re Warmerdam*, 33 F.3d 1354, 1361, 31 USPQ2d 1754, 1760 (claim to a data structure *per se* held nonstatutory). Such claimed data structures do not define any structural and functional interrelationships between the data structure and other claimed aspects of the invention which permit the data structure’s functionality to be realized. In contrast, a claimed computer-readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure’s functionality to be realized, and is thus statutory.

Similarly, computer programs claimed as computer listings *per se*, *i.e.*, the descriptions or expressions of the programs, are not physical “things.” They are neither computer components nor statutory processes, as they are not “acts” being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer which permit the computer program’s functionality to be realized. In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program’s functionality to be realized, and is thus statutory. *See In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035.

Claims 1-4 and 12 recite an “assembler” comprising a series of elements that, viewed in light of the specification, can be reasonably interpreted as software, *per se*. The claims do not define any structural and functional interrelationships between the software elements and a computer that would permit the described functionality to be realized when the software is employed as a computer component. Accordingly, claims 1-4 and 12 appear to merely set forth functional descriptive material *per se*, which is nonstatutory.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 1-8 and 12 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described

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in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Independent claim 1 recites, “wherein the assembler automatically tracks changes in the instruction set by acquiring the data from the descriptor file reflecting the changes thereby a hard-coding of the assembler is reduced.” Similarly, independent claims 5, 7, and 8 each recite, “automatically tracking the changes in the instruction set by acquiring the data from the descriptor file thereby a hard-coding to track the changes is reduced.”

As discussed in the Advisory Action mailed February 1, 2008, the only support for this feature that applicants have pointed out is page 8, lines 31-32 of the specification, which reads in full, “[T]he assembler is able to automatically track changes in the instruction set as they occur.” (See Remarks 12/21/2007 p. 7). As further explained in the Advisory Action,

This cited portion merely expresses a preference that the assembler be able to automatically track changes in the instruction set as they occur and by itself provides no enabling disclosure necessary to support such a feature. Further, the description that follows applicant’s cited portion appears to describe a manual derivation of the descriptor file from manipulation and inspection of the instruction set, and merely suggest without any additional enabling disclosure that a “utility program 31” can be used to access instruction set architecture data to provide the descriptor file. (Specification p. 9, lines 32-36.).

(Advisory Action 2/1/2008). The “automatic” embodiment of applicants’ disclosure includes the use of utility program 31 to access instruction set architecture data 30 to provide the descriptor file 24.

In order to practice the claimed method, one of ordinary skill in the art would have to create a computer program capable of carrying out at least the steps of creating a new descriptor file as changes occur to the instruction set. As the court observed in *Sherwood*, the writing of a program may require varying degrees of skill:

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In general, writing a computer program may be a task requiring the most sublime of the inventive faculty or it may require only the droning use of clerical skill. The difference between the two extremes lies in the creation of mathematical methodology to bridge the gap between the information one starts with ("the input") and the information that is desired ("the output").

In re Sherwood, 613 F.2d 809, 816-17, 204 USPQ 537, 544 (CCPA 1980), cert. denied, 450 U.S. 994 (1981). Given a properly defined program specification or a detailed algorithm (*i.e.*, the “bridge” between the input and output, *see Id.*), a computer programmer can generally produce an acceptable computer program to carry out the functions necessary to implement the program specification. However, where the program specification is lacking, the computer will, in general, not relieve the burden on the programmer of filling in the missing details. In this case, the steps necessary to carry out the manipulation and inspection of the instruction set are not described with any particularity such that this procedure can be easily automated through software. In order to develop such software, a programmer must first determine the nature and format of the input, and next determine the necessary algorithm to translate such input into meaningful output. The only detailed description of the descriptor file appears to be the diagrammatic illustrations in Figs. 4 and 6. However, these figures illustrate tables and do not suggest a particular file structure, nor do they show the format of instruction set architecture data 30 or how it may be automatically translated into the illustrated format. Because the algorithm necessary to implement the automatic tracking of changes in the instruction set is not described in the specification and instead must be derived by a programmer through speculation as to what the appropriate inputs, translations, and outputs would be, one of ordinary skill in the art would not be able to practice the claimed method without undue experimentation.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric B. Kiss whose telephone number is (571) 272-3699. The examiner can normally be reached on Tue. - Fri., 7:00 am - 4:30 pm. The examiner can also be reached on alternate Mondays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Dam, can be reached on (571) 272-3695. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Eric B. Kiss/
Eric B. Kiss
Primary Examiner, Art Unit 2192